





Chassis

Designed for high-speed driving

The heavy-duty COMMANDER chassis and axles are designed for high speed driving under the most demanding field and road conditions ready to meet the tough demands of the professional farmer.

The platform is compact and very easy to access and gives you unobstructed access to the tank lid. The rear and floor plate can be removed allowing easy access to the fluid and electric system.

Low center of gravity

The design of the chassis with all steel parts located as low as possible in combination with a perfect match with the polyethylene tank provides low centre of gravity.

The 500 I RinseTank is placed over the rear axle and provides extra stability.



The HARDI COMMANDER is available with an optional unique hydraulic suspension system. The strong hydraulic cylinders absorb the shock loads instead of transferring them to the boom and the tractor. This offers you a high comfort level at high driving and spraying speeds.

The drawbar and axle on the COMMANDER 7000 I are as standard fully suspended. Axle suspension on 5500 I is an option. The full up and down load at the drawbar from the sprayer to the tractor is transferred through rubber dampers built into the chassis.

High quality surface treatment

The chassis as well as all other steel components have been pre-treated with zinc phosphate before a high quality coating of powder paint. This treatment provides outstanding protection against corrosion from chemicals and harsh weather conditions.





WorkZone

Easy operation

The COMMANDER has a WorkZone where all primary functions are placed in an easy to reach position. Everything you need to operate the sprayer is available in this area, and everything is designed to be simple and logical to understand and operate. The large safety locker is placed right over the WorkZone along with the clean water tank.

SmartValve

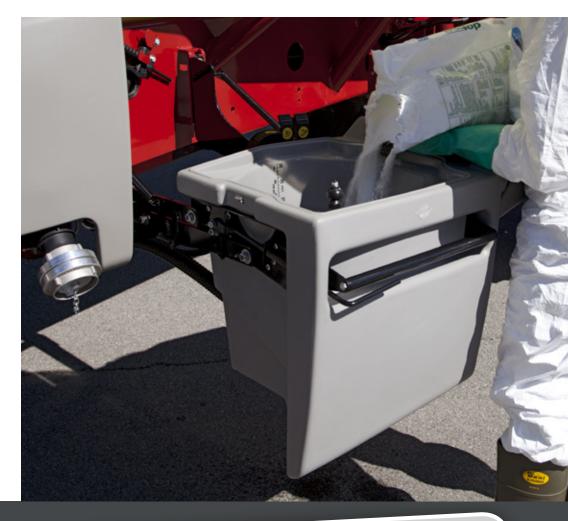
All primary functions needed to operate the sprayer when filling or cleaning are located in the centre of the WorkZone. The logically placed handles with easy to read icons make the system very easy to operate. This greatly reduces the start-up and operation time of the sprayer.

Fast filling

The advanced TurboFiller is one of the best on the market. It is specifically developed to handle large quantities of powders and liquids. Using a combination of high vacuum and powerful rotation inside the hopper, it mixes all types of chemicals quickly and safely. In addition, the TurboFiller is easy to both operate and clean.

High mixing capacity

Liquid at high pressure is being used to create a powerful rotation of the liquid inside the hopper. This movement gives the effect that every powder or liquid chemicals are mixed before they are sucked into the sprayer.





Easy operation

With the COMMANDER "i", the FluidBox is located at the WorkZone in the front. With a functional design, the sprayer operator will be able to quickly start the demanded operation. For non "i" version COMMANDER machines, a manual handle operation is offered.

- Easy operation of the SmartValves
- Control of filling, agitation, spraying and cleaning



The liquid system

- Fast and reliable

The COMMANDER's fluid system (DynamicFluid4) employs advanced fluid dynamics and application rate control to deliver fast response and accurate target rate application.

Pressure, flow, pump speed, forward speed, boom sections and application rate are monitored and processed using advanced computations. The DynamicFluid4 processor analyses the spraying data 20 times a second and provides pre-emptive rate control capability, altering the pump speed with pinpoint precision.

The proportional hydraulics used to control the pump speed are highly accurate and smooth but incredibly fast.

The liquid system can be operated from the cabin or from the ground.

The diaphragm pump

At the heart of the NAVIGATOR sits the robust and easy-to-service pump that HARDI is so well known for. The invention of this pump constituted the foundation upon which HARDI was founded more than 60 years ago. HARDI was the first to use diaphragms to separate the liquid from bearings, crankshaft and other vital pump parts, thereby allowing the pump to run dry without damage. In addition, this pump distinguished itself by being operated directly from the tractor's PTO shaft.



Advanced filters

- EasyClean filter (Suction)
- CycloneFilter (Pressure)

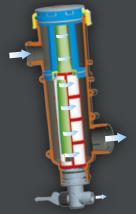
Suction filter

The EasyClean filter is a high-capacity suction filter. The filter's condition can be constantly monitored via a SafeSpray vacuum gauge to ensure it is cleaned only when necessary. When it's time for cleaning, simply twist the filter's lid 90° to close off its tank valve and open the filter for inspection. It doesn't get much easier than this.



Pressure filter

The CycloneFilter is a unique self-cleaning pressure filter. A high-speed circular flow makes the cleaning very effective. A unique boost function allows the filter to be flushed when needed.



Controllers

Full ISOBUS control

Complete integration

The complete integration of all important information on one work screen is a highly demanded criterion for most farmers. The HARDI touch-screen controller series are very easy to operate while providing an optimal overview for maximum control of the spray job.

All HARDI touch-screen terminals are ISOBUS terminals and made for spraying purpose. In combination with the Grip and the SetBox the operation in the field is easy and fast.

Integrated electronics

From the working screen, the driver can operate AutoHeight, AutoSectionControl as well as guidance and dosing. The map screen view can 2D or 3D. The HC 9600, HC 8700 and HC 9700 screens are able to divide the information with split screen for a better overview.

Data management and data transfer

The USB ports and the WiFi adapter allows data to be exchanged. This simplifies application reporting, providing

an easy way to generate detailed application reports for governmental record keeping. The data can be transferred to different farm management software.

ISOBUS terminal

The SmartCom system is always ISOBUS. The customer can order the NAVIGATOR and use the intelligent functions like AutoSectionControl direct from his own ISOBUS terminal if supported. To make the complex sprayer operation easier, the proven HARDI Grip and Setbox are standard equipment.

Extend your work screen

Use your mobile device or tablet to perform calibration, diagnostics, tank fill and many other activities anywhere around your machine. Using the XTEND technology, you can extend the user interface of your HC 8700 and HC 9700 to the screen of a iOS or Android device using a WiFi connection.

Feature	HC 9700	HC 8700	HC 9600	HC 8600
Mode of action	12.1" (30.7 cm)	8.4" (21.3 cm)	12.1" (30.7 cm)	8.4" (21.3 cm)
ISOBUS Universal Terminal	•	•	•	•
Mini view screens	3	2	UT Split screen	N/A
Dashboard & Interaction Keypad	•	•	N/A	N/A
HARDI workscreen	N/A	N/A	•	•
USB ports	•	•	•	•
WiFi adapter			•	•
Horizon XTEND	Optional	Optional	•	•
AutoSectionControl	•	•	•	•
Lightbar Guidance	On screen	On screen	In housing	In housing
Coverage Mapping	•	•	•	N/A
Data Logging	•	•	•	•
Variable Rate Application	•	Optional	•	•
Application Report	•	•	•	N/A
Boom Height Control	UT	UT	Integrated	Integrated
Camera Support	•	•	● Out	● Out
ISOXML data transfer	● In/Out	● In/Out	● Out	Out





Higher precision in your spray job

Precision is key to spraying. The HC 9700 controller offers the possibility to use ISOXML field maps in conjunction with your preferred farm management software. Task Data mode allows you to select, configure and run a task from the imported task data. Drawing on the features of the AutoSectionControl system, the HC 9700 allows you to shut off boom sections automatically in accordance with your field maps. Avoiding over-spraying reduces expenses and makes your farm more environmentally friendly. Field maps also makes it easier to work in conditions of low visibility such as dust or darkness.

Field mapping benefits

- High application precision
- Less usage of chemicals
- No overlapping areas



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Booms

- For all your needs

The ALPHA evo can be fitted with three types of booms:

- The advanced air assisted TWIN FORCE boom (see page 10-13)
- The high-performing conventional **DELTA FORCE** boom (see page **14-15**)
- The compact **DELTA** boom (see page **17**)

Each one comes with unique advantages, but all our booms deliver on application precision and speed.

The TWIN FORCE boom

- High capacity impact



Less chemicals, money and environmental impact

The TWIN FORCE boom employs the world's best application system to maintain control in windy conditions. Using a combination of targeted airflow, angle and speed, the system can reduce drift by up to 80%. Efficient drift control means more spraying days – up from 31 to 76 days in a spring study.

It will also result in better crop penetration, even in dense fields, thereby reducing the consumption of plant protection products

and water by up to 30% Taking the reduced re-filling time and the higher driving speed into consideration, the TWIN FORCE boom will increase spraying capacity by up to 100%. This will give you the best return on your investment, both on your financial and environmental accounts.

The TWIN FORCE boom is available from 18 m to 36 m.

TWIN system advantages:

- Reduce drift by up to 80%
- Save chemicals by up to 30%
- Save water by up to 30%
- Increase crop penetration
- Increase spray capacity by up to 100%
- Save money to chemicals



PrimeFlow – Pressure circulation

PrimeFlow circulates and primes the boom before the actual spraying and is controlled by an ON/OFF motor at each nozzle body. Open/close action is instant.

- No untreated areas at spray start
- ▶ HARDI PENTALET 5-nozzle holders as standard
- ➤ No chemical sedimentation in the spray lines
- Flush of boom lines is possible without spraying on the ground
- Dynamic setup of sections



- Superb boom stability with AutoTerrain and NegativeTilt
- Precise application with hydraulic AntiYaw dampening
- Higher durability and lower weight, due to new folding system and extensive use of aluminium in the outer wings
- Manual control at power outage
- Easy handling with hydraulic support wheels and AutoTerrain sensors













18-36 m

AutoTerrain

AutoSlant

AntiYaw

NegativeTilt









REDUCE DRIFT WITH HARDI TWIN

UP TO **80%**



UP TO **30%**



Automatic and safe change of nozzles from the drivers seat to quickly overcome more field- and weather conditions with AutoSelect and AutoSelectDuo.

Save money

Insert your spray figures in our HARDI TWIN calculator app to find out just how much money you can save by using a TWIN FORCE boom.

www.hardi-twin.com





the HARDI TWIN was tested at Flakkebjerg/Aarhus University Denmark over a two year period from 2017 and 2018 in a comparison with a conventional boom. The purpose of the test was to monitor the difference on deposits under the boom and the drift besides the boom using conventional and TWIN air assistance spraying technics.

Spray deposition and spray drift from applications at two wind speeds were tested at 8 and 12 km/h with conventional technique and at 8, 12 and 16

The report clearly shows the advantages of TWIN FORCE air-assistance, that spraying speeds from 8 to 12 km/h and high wind speeds are not causing problems for the quality of the application — while saving up to 30% chemicals and a 80% reduction in drift.

Download test results: www.hardi-twin.com



TWIN technique

Powerful blower units provide air to the left and right boom sides respectively. The large amount of air produced by the double fans allows for faster application speeds even under very difficult weather conditions. Each blower can be stepless adjusted to a maximum output of 2000 m³/h/m boom width and a maximum air speed of 35 m/sec.

Up to 100% more capacity

Spray drift from conventional sprayers can be so heavy that the operator has to stop before the spray job is finished. With efficient drift control it is much easier for the operator to be able to spray the entire field in one operation.

In most conditions, farmers using the TWIN sprayer get at least twice as many hours available for a safe and efficient spray job as with conventional sprayers.

The DELTA FORCE boom - High performance

Compact on the road - wide in the field

The DELTA FORCE boom is made to perform. It is a practical but strong boom designed for productivity and performance. We have optimised weight and strength to produce a large boom for reliable performance at fast spray speeds. Despite its width, the DELTA FORCE boom is only 2.55 m wide when folded up for transport. The boom's simple yet effective pendulum suspension controls boom movements, while a low centre of gravity ensures perfect boom balance. With just two parameters to adjust

(pendulum and dampening), the DELTA FORCE boom is easy to customise and maintain.

The DELTA FORCE boom is available from 24 m to 39 m.

One boom – two spray widths: HARDI's boom-folding system allows the operator to spray at two different widths by choosing whether to fold out the last section.



The DELTA FORCE boom can be fitted with additional nozzle holders to allow for a 25 cm spacing between nozzles in addition to the standard 50 cm.

In combination with the AutoTerrain boom management system, this reduces potential drift by allowing for a lower boom height. It also means that smaller nozzles with smaller droplets can be used to improve crop coverage.



Minimize boom movement

For a perfect application result, reduction of the horizontal movements is crucial.

The DELTA FORCE boom is as standard equipped with an anti-yaw dampening system between the center section and the boom wings. The 24 to 30 m booms have a rubber dampening system as standard and hydraulic dampening as option, while the 32 to 39 m are equipped with an hydraulic dampener as standard.



Material optimisation

We always seek to use the most innovative combinations of materials. The DELTA FORCE boom is a prime example. The 39 m boom consists of a high-strength steel centre with lightweight aluminium outers and break-away.

- Superb boom stability with AutoTerrain and NegativeTilt
- Precise application with hydraulic AntiYaw dampening
- Higher durability and lower weight, due to new folding system and extensive use of aluminium in the outer wings
- Manual control at power outage
- Easy handling with hydraulic support wheels and AutoTerrain sensors











24-39 m

AutoTerrain

AutoSlant

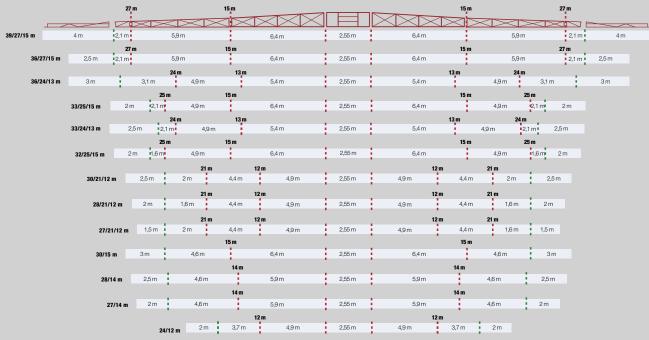
AntiYaw

NegativeTilt

HARDI DELTA FORCE is available in:

3-fold: 39/27/15 m, 36/27/15 m, 36/24/13 m, 33/25/15 m, 33/24/13, 32/25/15 m, 30/21/12 m, 28/21/12 m, 27/21/12 m.

2-fold: 30/15 m, 28/14 m, 27/14 m, 24/12 m





Automatic control of height, slant, tilt and yaw optimises the boom position, and all but eliminates the risk of hitting the ground. It also reduces the risk of drift to the benefit of farmer and environment. Yaw is counteracted by hydraulic accumulators, which power up every time the boom unfolds. Each side can be automatically levelled independently, giving you the possibility of negative tilt.

A stable boom reduces wear and tear on both the sprayer and its operator. The sprayer will have a longer lifespan, and the operator

The result is exceptional application precision, even at fast driving

will experience less fatigue and stress, because the automatic systems reduce the need for constantly monitoring the boom.

AutoTerrain

This unrivalled boom management system distinguishes itself from others by preventing rather than correcting unintended boom movements. Using ultrasonic sensors on the boom wings and angle sensors at the centre, it monitors the boom's movements continuously, responding to forces acting upon the boom before it is disturbed. By making smooth adjustments to the boom's slant,

tilt and height, AutoTerrain provides accurate contour following and crop clearance — essential for precise spray application.

The AutoTerrain system has been tested under rigorous field conditions, showing excellent performance when spraying with low boom heights at high driving speeds of more than 15 km/h.

When turning on headlands, the AutoTerrain system will counter the boom's natural pendulum effect to prevent the inner side from dipping. The result is a level boom throughout the turn.



speeds.

AutoSlant

AutoSlant controls boom height and slant.

- Boom height
- Hydraulic slant
- 2 ultrasonic sensors
- Available for:
- DELTA FORCE and TWIN FORCE



AutoTerrain:

- Boom height
- Hydraulic slant
- Individual tilt of boom wings
- Negative tilt
- 3 or 5 ultrasonic sensors
- 3 angle sensors on the center
- 3 temperature controlled proportional valves
- Available for: DELTA FORCE and TWIN FORCE



NegativeTilt

Negative tilt for superb boom stability, allows for downward tilting of the boom by up to -4°, especially useful when spraying a lower level, for instance on a ridge.



AntiYaw

Dampens horizontal movements and shock loads in the boom.



Optional extras



FastFiller

The high-capacity FastFiller is capable of filling up to 800 l/min. The system is 100% self-priming. It works in combination with the ChemFiller and simultaneous filling from both.

Pressure Emptying

When fitted, this allows you to return liquid fertilizer or any other solution back into the storage tank.





For night spraying, lights can be added to the boom.



Controllers

The HC 8600, HC 9600, HC 8700 and HC 9700 controllers offer growers a powerful, full-featured precision farming tool.



Night spraying light

Working light can be fitted if spraying and mixing are done at night.



FlexCapacity pump system

COMMANDER 5500/7000 I can be equipped with a FlexCapacity pump system.



ChemLocker

A ChemLocker can be fitted and holds chemical containers or bags.



External cleaning equipment

Spray gun and hose wheel for external cleaning.

Technical specifications

Tank, litres	3300	4500	5500	7000
Pumps, type – I/min	464-280 / 464H-334	464-280 / 464H-334	464H-334 / 2x464-598	464H-334 / 2x464-598
Booms, m	DELTA 18-24 m TWIN FORCE 18-30 m	DELTA 18-24 m TWIN FORCE 18-36 m DELTA FORCE 24-39 m	TWIN FORCE 24-36 m DELTA FORCE 24-39 m	TWIN FORCE 24 -36 m DELTA FORCE 27-39 m
RinseTank	500	500	500	500
Total height, m A)	3.60 (13.6x48)	3.60 (13.6x48)	3.80 (20.8x42)	3.80 (20.8x42)
Total length, m B)	7.30	7.80	8.50	8.50
Length draw to axel, m (C)	4.80	5.30	6.05	6.05
Turning radius SafeTrack, m	6.00	6.20	9.00	9.00
Track width, m D)	1.50-2.25	1.50-2.25	1.80-2.25	1.80-2.25
Width DELTA boom, m E)	2.55	2.55	-	-
Width DELTA FORCE, m E)	2.55	2.55	2.55	3.00
Width TWIN FORCE, m E)	3.00	3.00	3.00	3.00
Clearance, m F)	0.8 (13.6x48)	0.8 (13.6x48)	0.78 (20.8x42)	0.78 (20.8x42)
Weight total (empty tank), kg	3800-4950	3950-5500	5100-7200	5800-7250
Hydraulic suspension	Optional	Optional	Optional	Standard
Suspended drawbar	-	-	Standard	Standard

DELTA 18-24 m

The DELTA boom shares most of the features from the FORCE range and is available in boom sizes 18-24 m. The DELTA boom is the perfect choice for the medium to large farms.

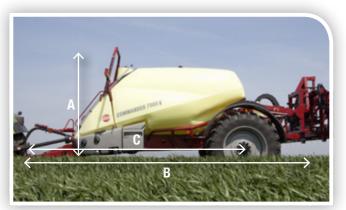
DELTA FORCE 24-39 m

DELTA FORCE is designed to be a large boom. The selection of features and the layout of the boom structure is targeted to perform at high driving speed and high performance at boom widths of 24-39 m.

TWIN FORCE 18-36 m

The TWIN FORCE boom offers the same strength and durability as the FORCE boom combined with the advantages of HARDI's unique TWIN air system.











care of plants one by one.

We believe in a future where our products will be able to take

HARDI INTERNATIONAL A/S

